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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/777,870	02/07/2001	Hiroyuki Takakura	000555	4048

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ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP  
1725 K STREET, NW  
SUITE 1000  
WASHINGTON, DC 20006

EXAMINER

HUNG, YUBIN

ART UNIT PAPER NUMBER

2625

DATE MAILED: 01/16/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/777,870

Applicant(s)

TAKAKURA ET AL.

Examiner

Yubin Hung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-3 is/are allowed.
- 6) ☒ Claim(s) 4-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 February 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to because elements in the drawings are labeled in Japanese. While the elements are numbered and their corresponding English equivalents are provided in the respective subtitles, the numbers do not serve the same purpose as the reference signs because many of them are not referenced in the description. (For example, see reference numerals in Fig. 1.)

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Fig. 1, numeral 2 (mentioned in the subtitle but not shown in the drawing). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to because in the subtitle to Fig. 8, "Case of non-white/black-permuted" should have been "Case of white/black-permuted." A proposed drawing correction or corrected drawings are required in reply to the

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Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 4 recites the limitation "the white pixels and black pixels of said images are permuted" in line 5. There is insufficient antecedent basis for this limitation in the claim because its parent claim (claim 1) has not discussed binarization, let alone how the values (black or white) of pixels are assigned after they are binarized; therefore there is insufficient antecedent basis for determining how the permutation is to be carried out.

6. Claim 5 recites the limitation "the color component image which has been selected" in line 11. There is insufficient antecedent basis for this limitation in the claim because the color component selection unit recited in the same claim does not select color component images. Dependent claims 6 and 7 are similarly rejected.

(Note: It appears that in line 10 of claim 5 "binarization routine" should have been "selection routine." Hereinafter, for examination purpose "binarization routine" will be interpreted as "selection routine.")

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7. Claim 6 recites the limitation "peak detection unit" in line 4. There is insufficient antecedent basis for this limitation in the claim. Dependent claim 7 is similarly rejected.

(Note: Hereinafter, for examination purpose "Peak detection unit" will be interpreted as "peak detection mechanism" as per claim 5.)

8. Claim 7 dependent on claim 5 recites the limitation "said threshold value" in line 6. There is insufficient antecedent basis for this limitation in the claim.

***Allowable Subject Matter***

9. Claims 1-3 are allowed.

10. The following is an examiner's statement of reasons for allowance:

11. Regarding claim 1 (and similarly claim 5 as interpreted), the prior art of record fails to teach or suggest, alone or in combination, an image processing method comprising, along with other recited limitations:

- Counting the number of colors selected from among said multiple color components whose high-density-side peak values are higher than their low-density-side peak values; and
- determining an image which is to become a binarization object based on the number of color components counted.

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The closest prior arts of Steinkirchner et al. (US 5,295,202) and Takemoto (US 6,172,767) jointly teach a method for binarizing all color components of a color image. However, neither Steinkirchner et al. nor Takemoto teaches determining binarization object basing on the number of color components whose high-density-side peak values are higher than their low-density-side peak values.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

12. Claims 4-6; claim 7 dependent on claim 5; and claim 7 dependent on claim 6 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Levien (US 5,544,258) – Uses histograms for R, G, B components of a color image to determine color correction

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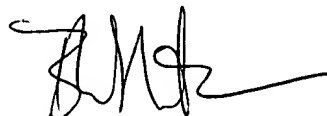
- Nomura (US 5,708,728) – Binarizes color components of a color image with error diffusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yubin Hung whose telephone number is (703) 305-1896. The examiner can normally be reached on 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

Yubin Hung  
Patent Examiner  
January 8, 2004



**BHAVESH M. MEHTA**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**